



TX79LXX

<http://www.txsemi.com>

150 mA Negative Voltage Regulators

Features

- Built-in Short-Circuit Protection
- Internal Thermal Overload Protection
- Output Current Up to 150mA
- SOT89, TO92 package

General Description

The TX79LXX Series negative voltage regulators are inexpensive, easy-to-use devices suitable for numerous applications requiring up to 150 mA. Like the higher powered TX79LXX Series negative regulators, this series features thermal overload protection and short-circuit protection,

making them remarkably rugged. In most applications, no external components are required for operation. The TX79LXX devices are useful for on-card regulation or any other application where a regulated negative voltage at a modest current level is needed.

Selection Table

Part No.	Output Voltage	Package	Marking
TX79L05XX	-5.0V	SOT89-3 TO92	79L05/TXxxx
TX79L06XX	-6.0V		79L06/TXxxx
TX79L08XX	-8.0V		79L08/TXxxx
TX79L09XX	-9.0V		79L09/TXxxx
TX79L12XX	-12.0V		79L12/TXxxx
TX79L15XX	-15.0V		79L15/TXxxx

Order Information

TX79L①②③④

Designator	Symbol	Description
① ②	Integer	Output Voltage (-15 ~ -5V)
③	P	Package: SOT89-3
	T	Package: TO92
④	R	RoHS / Pb Free
	G	Halogen Free

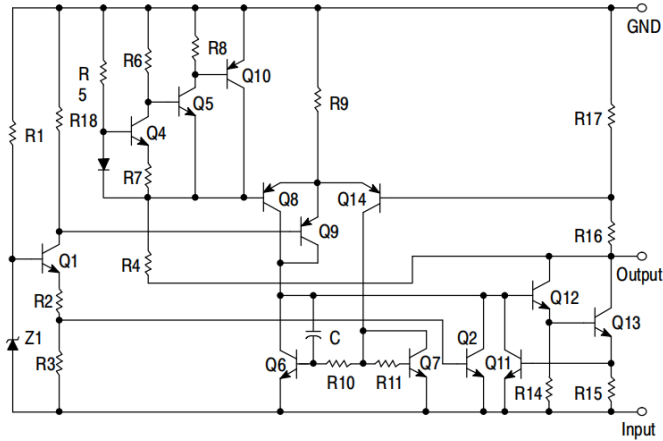


TX79LXX

<http://www.txsemi.com>

150 mA Negative Voltage Regulators

Block Diagram



Pin Configuration

SOT89-3 (Top View)

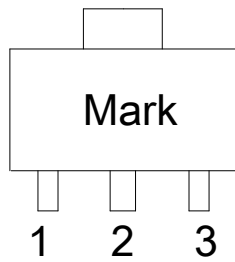


Table1: TX79LXX series (SOT89-3 PKG)

PIN NO.	PIN NAME	FUNCTION
1	GND	GND pin
2	VIN	Input voltage pin
3	VOUT	Output voltage pin

TO92 (Top View)

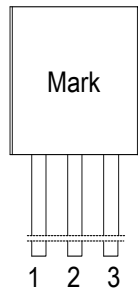


Table2: TX79LXX series (TO92 PKG)

PIN NO.	PIN NAME	FUNCTION
1	GND	GND pin
2	VIN	Input voltage pin
3	VOUT	Output voltage pin



TX79LXX

<http://www.txsemi.com> 150 mA Negative Voltage Regulators

Absolute Maximum Ratings (Ta=25°C)

Parameter	Rating	Unit	
Input supply voltage: VIN MAX	-35	V	
MAX. Output current: Iout	-150	mA	
MAX Power:	SOT89	0.5	W
Pmax	TO92	0.5	W
Operation temperature: Topr	-40~125	°C	
Storage temperature: Tstr	-55~150	°C	
Soldering temperature and time	+260(Recommended 10S)	°C	

Note: The absolute maximum ratings are rated values exceeding which the product could suffer physical damage. These values must therefore not be exceeded under any conditions.

Electrical Characteristics

The following specifications are based on the TX79L06, and under the condition of Cin = Cout = 1uF, Ta=25°C, unless specified otherwise.

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Output Voltage	Vout	Io=-40mA, VIN=-10V	0.98vout	vout	1.02vout	V
			0.95vout	vout	1.05vout	
		Io=-1mA~-40mA VIN=-7V~-18V	0.96vout	vout	1.04vout	
			Io=-1mA~-100mA VIN=-10V	0.95vout	vout	
Line Regulation	LNR	VIN=-7V~-18V, Io=-10mA	-50	-	50	mV
		VIN=-8V~-18V, Io=-10mA	-30	-	30	
Load Regulation	LDR	VIN=-10V, Io=-1mA~-100mA	-90	-	90	mV
		VIN=-10V, Io=-1mA~-40mA	-60	-	60	
Dropout Voltage	VDIF	Ta=25°C, Io=-100mA	-	1	-	V
Output noise Voltage	VN	F=10Hz to 100KHz	-	200	-	uV/Vo
Ripple Rejection	PSRR	Ta=25°C, f=120Hz, Io=-40mA, VIN=-8V eIN=1Vpp	-	60	-	dB
Quiescent Current	Iq	VIN=-10V	-	3	-	mA

LNR: Line Regulation. The change in output voltage for a change in the input voltage. The measurement is made under conditions of low dissipation or by using pulse techniques such that the average chip temperature is not significantly affected.

LDR: Load Regulation. The change in output voltage for a change in load current at constant chip temperature.



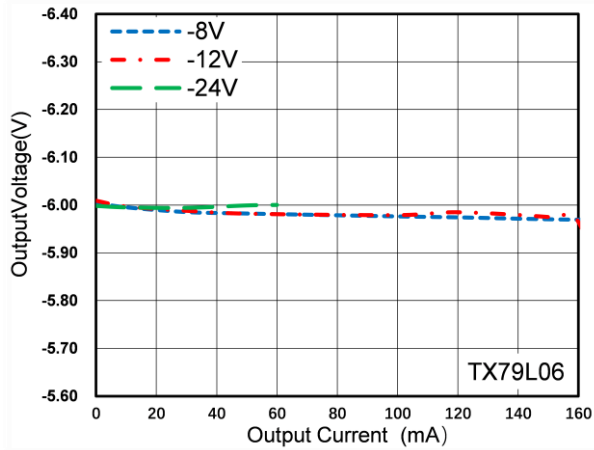
TX79LXX

<http://www.txsemi.com> 150 mA Negative Voltage Regulators

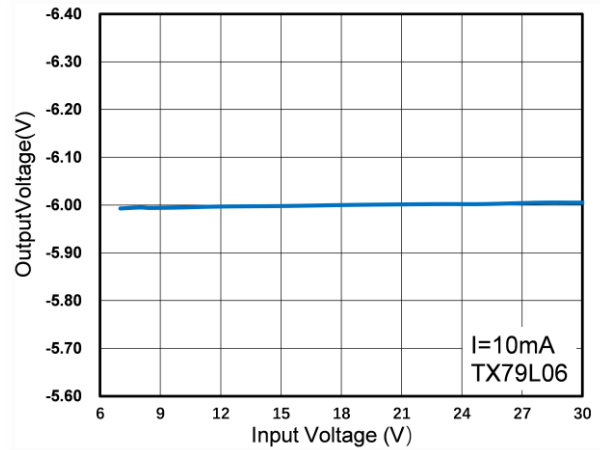
Typical Performance Characteristics

Note: $C_{IN}=0.33\mu F$ $C_{OUT}=0.1\mu F$ $T=25^{\circ}C$ unless specified otherwise

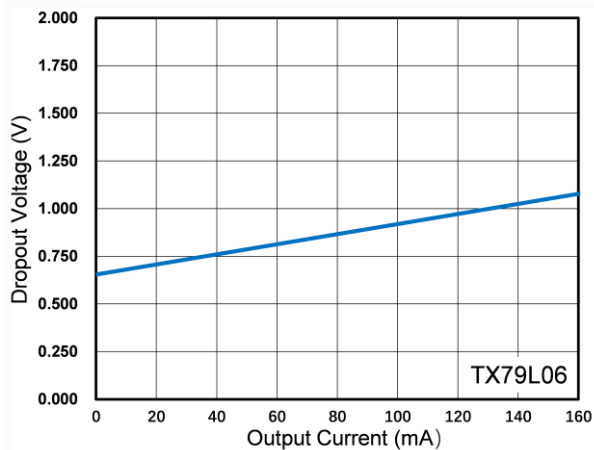
(1) Output Voltage VS Output Current (VOUT=-6.0V)



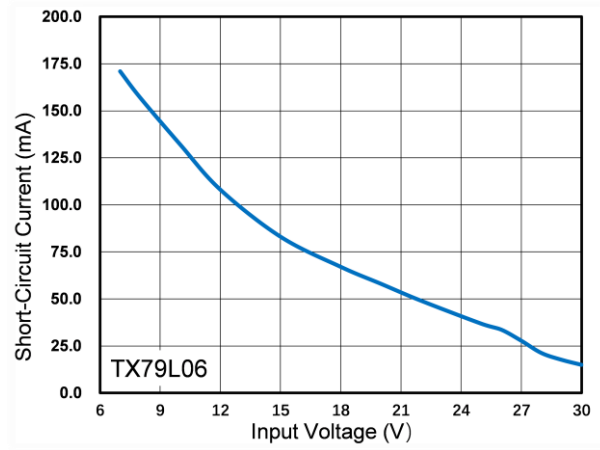
(2) Output Voltage VS Input Voltage (VOUT=-6.0V)



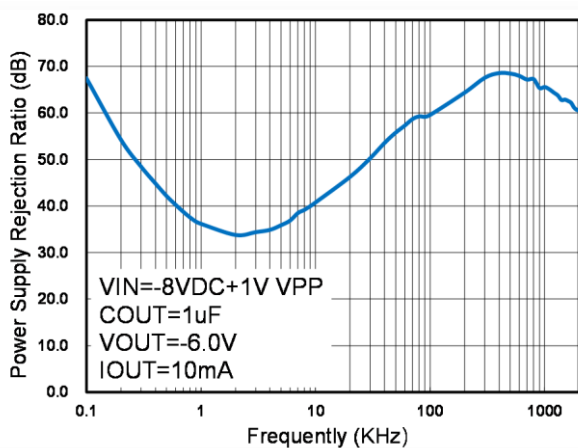
(3) Dropout Voltage VS Output Current (VOUT=-6.0V)



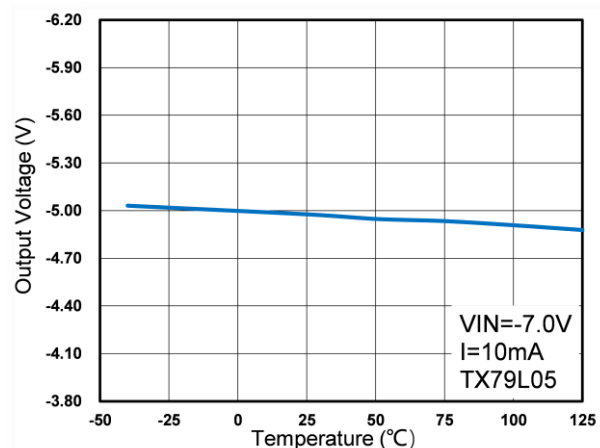
(4) Short-Circuit Current VS Input Voltage (VOUT=-6V)



(5) PSRR



(6) Output Voltage VS Temperature (VOUT=-5.0V)

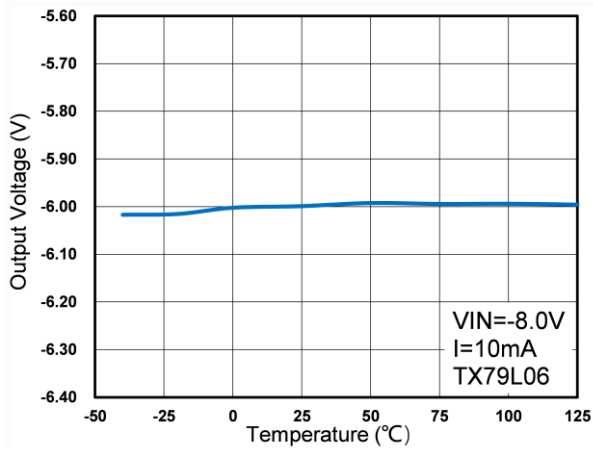




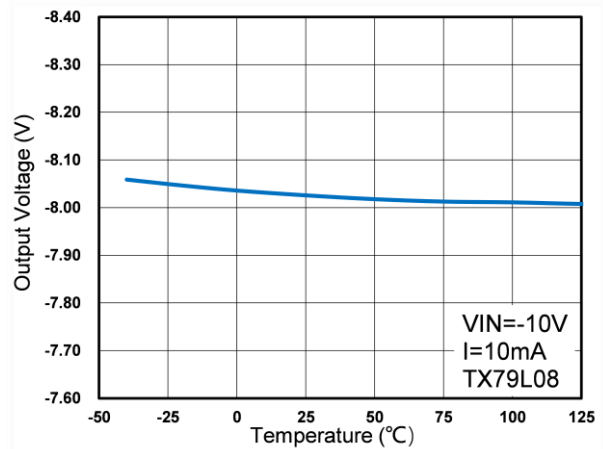
TX79LXX

<http://www.txsemi.com> 150 mA Negative Voltage Regulators

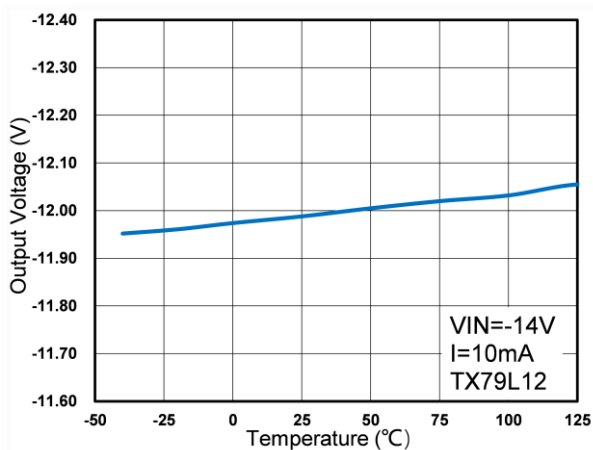
(7) Output Voltage VS Temperature (VOUT=-6.0V)



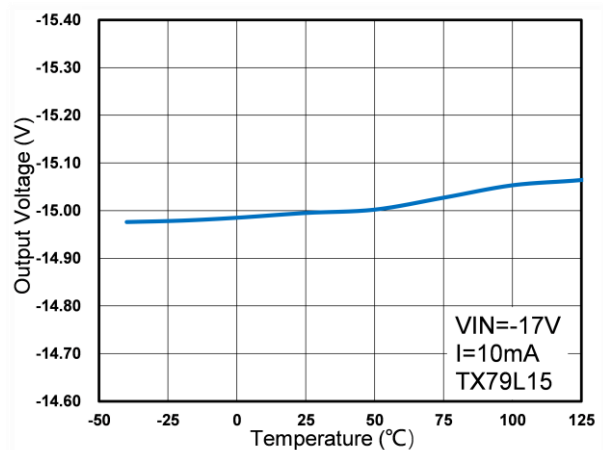
(8) Output Voltage VS Temperature (VOUT=-8.0V)



(9) Output Voltage VS Temperature (VOUT=-12.0V)



(10) Output Voltage VS Temperature (VOUT=-15.0V)

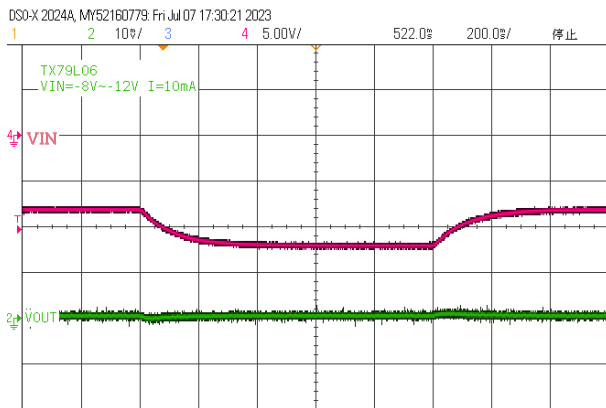




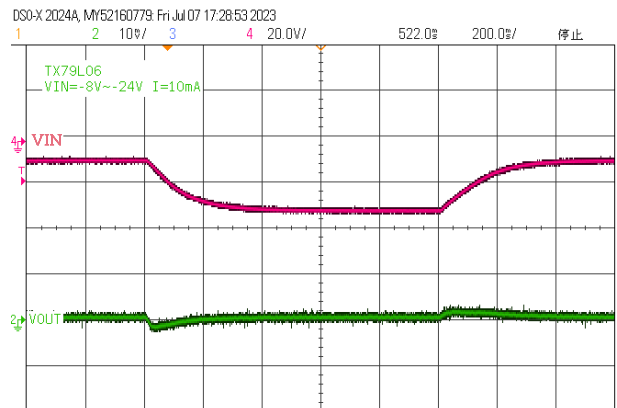
TX79LXX

<http://www.txsemi.com> 150 mA Negative Voltage Regulators

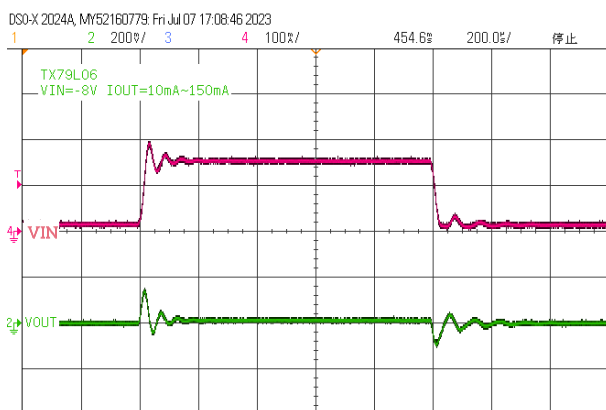
(11) Input Transient Response (VIN=-8V ~ -12V)



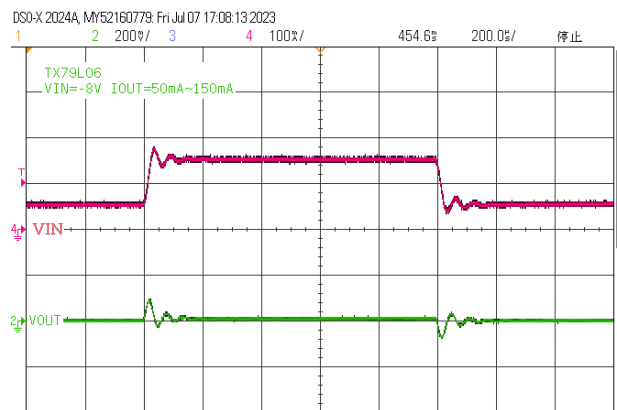
(12) Input Transient Response (VIN=-8V ~ -24V)



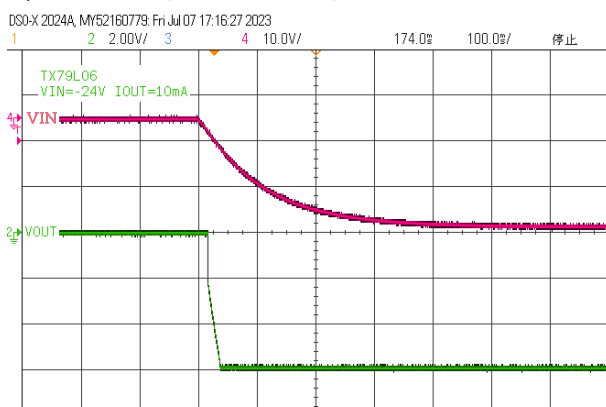
(13) Load Transient Response (IOUT=10mA-150mA)



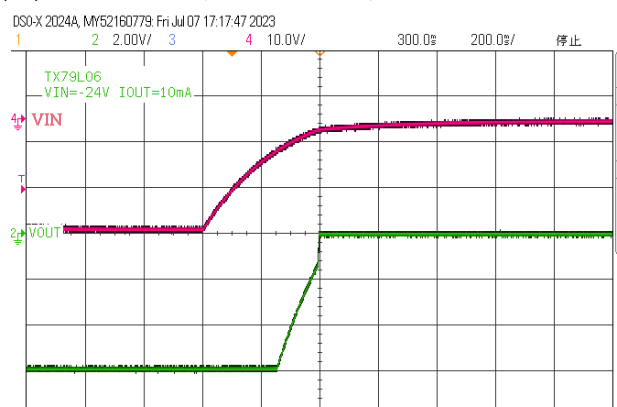
(14) Load Transient Response (IOUT=50mA-150mA)



(15) Power ON (VIN=-24V I=10mA)



(16) Power OFF (VIN=-24V I=10mA)





TX79LXX

<http://www.txsemi.com> **150 mA Negative Voltage Regulators**

Typical Application

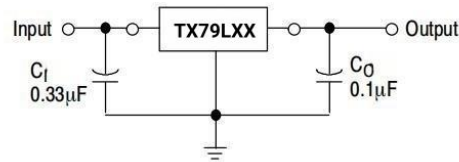


Fig.1 Standard Application

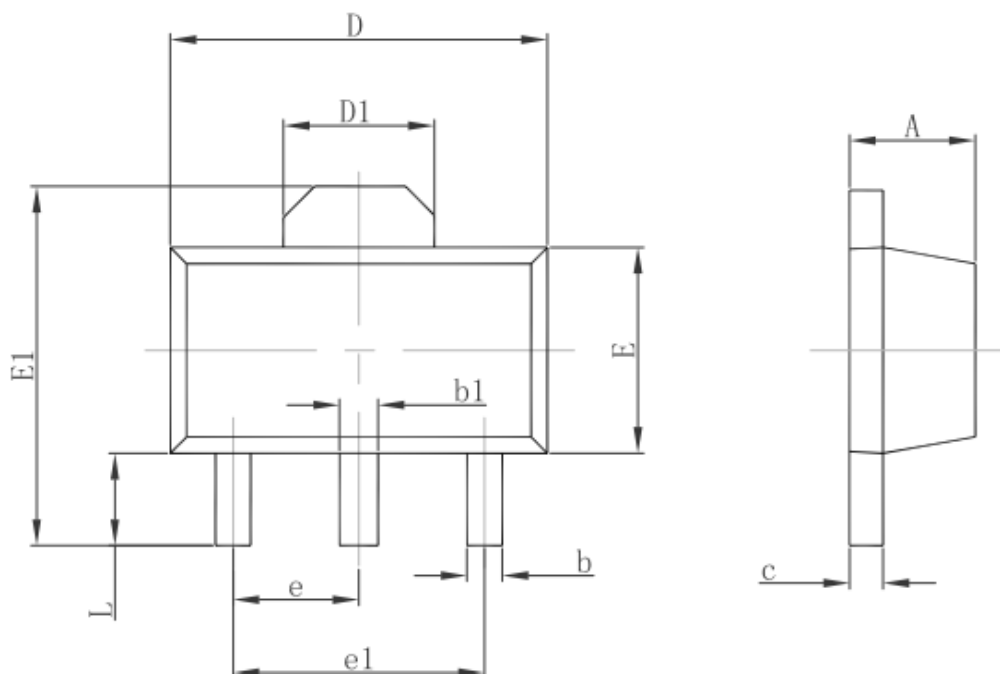
The TX79LXX Series of fixed voltage regulators are designed with Thermal Overload Protections that shut down the circuit when subjected to an excessive power overload condition, Internal Short Circuit Protection that limits the maximum current the circuit will pass. In many low current applications, compensation capacitors are not required. However, it is recommended that the regulator input be bypassed with a capacitor if the regulator is connected to the power supply filter with long wire length, or if the output load capacitance is large. An input bypass capacitor should be selected to provide good high-frequency characteristics to insure stable operation under all load conditions. A $0.33\ \mu\text{F}$ or larger tantalum, mylar, or other capacitor having low internal impedance at high frequencies should be chosen. The bypass capacitor should be mounted with the shortest possible leads directly across the regulator's input terminals. Normally good construction techniques should be used to minimize ground loops and lead resistance drops since the regulator has no external sense lead. Bypassing the output is also recommended.



TX79LXX

<http://www.txsemi.com> 150 mA Negative Voltage Regulators

3-pin SOT89-3 Outline Dimensions



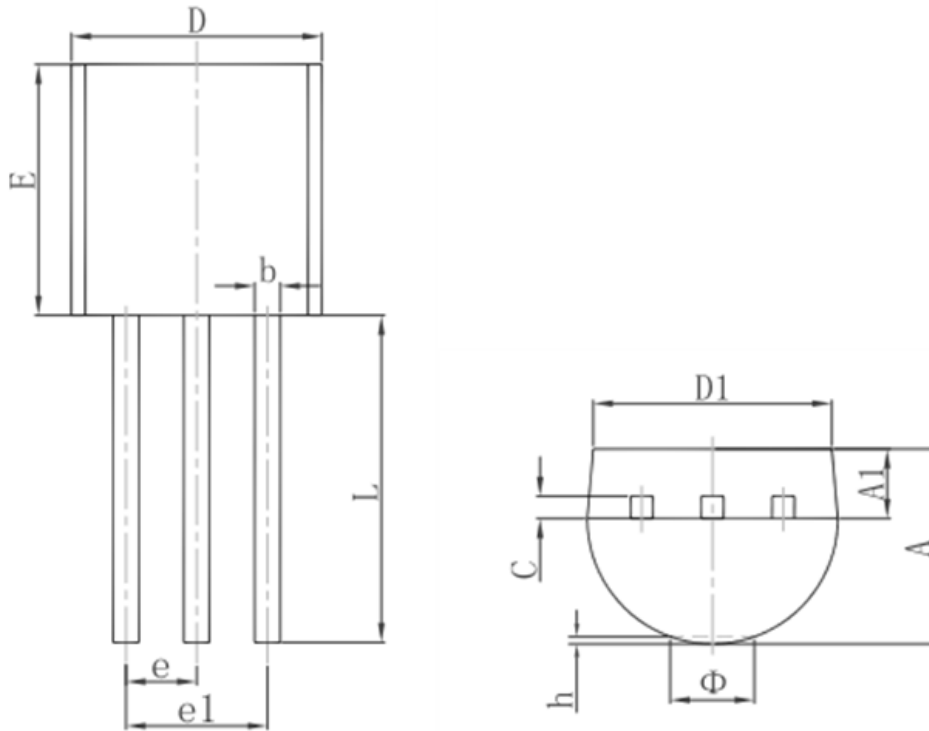
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.020
b1	0.400	0.580	0.016	0.023
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.550 REF.		0.061 REF.	
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500 TYP.		0.060 TYP.	
e1	3.000 TYP.		0.118 TYP.	
L	0.900	1.200	0.035	0.047



TX79LXX

<http://www.txsemi.com> 150 mA Negative Voltage Regulators

3-pin TO92 Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	3.300	3.700	0.130	0.146
A1	1.100	1.400	0.043	0.055
b	0.380	0.550	0.015	0.022
c	0.360	0.510	0.014	0.020
D	4.300	4.700	0.169	0.185
D1	3.430		0.135	
E	4.300	4.700	0.169	0.185
e	1.270 TYP.		0.050 TYP.	
e1	2.440	2.640	0.096	0.104
L	14.100	14.500	0.555	0.571
Phi		1.600		0.063
h	0.000	0.380	0.000	0.015



TX79LXX

<http://www.txsemi.com>

150 mA Negative Voltage Regulators

© Shanghai TX Semiconductor Sci.-Tech. Co., Ltd.

TX cannot assume responsibility for use of any circuitry other than circuitry entirely embodied in a TX product. No circuit patent license, copyrights or other intellectual property rights are implied. TX reserves the right to make changes to their products or specifications without notice. Customers are advised to obtain the latest version of relevant information to verify, before placing orders, that information being relied on is current and complete.